



Dart Hawkesbury  
1270 Aberdeen St  
Hawkesbury, ON K6A 1K7 Canada  
Tel (613) 632-5200  
Fax 613 632-5246

# Purchasing Receipts

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days	Past Due	Total	Supplier Name
PO041480	MEC002-VU	1	1	Net 30	M304R5.500	304 SS Round bar 5.500 cut to size: 10.625" ; MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft				9	11/9/2018	9		S125168	Stock	11/6/2018	\$ 230.40 / ft	0		\$2,040.00	Metaux Castle
		2			M6061T6R5.500	6061T6 Round Bar 5.500" Dia. ; MATERIAL: 6061-T6/T651/T65107/T6511/T62 ALUMINUM ROUND BAR AS PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117 4128/4115/4116 OR QQ-AA-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B221 OR ASTM B221				3		3		S125169	Stock	11/6/2018	\$ 91.82 / ft	0		\$305.76	Metaux Castle
		5			MT-4140QT-R6.500	AISI 4140 Q&T Round Bar 6.500" Dia. MATERIAL: AISI 4140 QUENCHED & TEMPERED STEEL ROUND BAR ASTM 4140 QT or ASTM 4142 QT						3		S125170	Stock	11/6/2018	\$ 119.25 / ft	0		\$357.75	Metaux Castle
		7			M17-4-H1150-R1.500	17-4 SS Round Bar 1.500" ; MATERIAL: 17-4 PH CONDITION H1150 MATERIAL: 17-4 PH / S 17400 / TYPE 630 SS ROUND BAR GRAIN MUST BE ALONG LENGTH OF BAR MINIMUM YIELD STRENGTH PER TABLE MINIMUM ULTIMATE STRENGTH PER TABLE SPECIFICATION: AMS 5643 OR ASTM A564 H1150 MIN. YIELD TENSILE 105 KSI / MIN. ULTIMATE TENSILE 135 KSI receive ft				12		13		S125171	Stock	11/6/2018	\$ 28.45 / ft	0		\$362.74	Metaux Castle
										<b>Total:</b>		<b>27</b>								<b>\$3,066.25</b>	



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

# **PURCHASE ORDER** **PO041480**

**Supplier:** MEC002-VU  
Metaux Castle  
P.O. Box 4090 Stn A  
Toronto  
ON  
M5W OE9 Canada

**PO No:** PO041480

**PO Date:** 10/26/18

**Due Date:** 11/9/18

**Purchase Order**

**Revision:**

**Revision Date:**

**Ship-To Contact:** Lavoie, Chantal  
clavoie@dartaero.com

**Via:** Ground

**Pynt Terms:** Net 30

**Freight Terms:**

**Special Comments:**

**E-MAILED**  
OCT 29 2018

**Ship To:** 1270 Aberdeen Street  
Hawkesbury  
ON  
K6A 1K7 Canada  
Phone: 613-632-5200

## **Items**

Line Item	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1 <i>AK</i>		M304R5.500		304 SS Round bar 5.500 cut to size: 10.625" : MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft	Firmed	-	11/9/18	8.854 ft	0 ft <i>8.854 ft</i>	9 ft	\$230.404333/ft	\$2,040.00 <i>AK 18/11/06</i>
<b>Line Item Note</b> NOTE 10 PCS CUT TO SIZE 10.625" = 8.854 FT												
2 <i>AK</i>		M6061T6R5.500		6061T6 Round Bar 5.500" Dia. : MATERIAL: 6061- T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR AS PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117 4128/4115/4116 OR QQ- AA-200/8 OR AMS-QQ-A- 200/8 OR AMS 4160 OR ASTM B221 OR ASTM B221	Firmed	-	11/9/18	3 ft	0 ft <i>3.33 ft</i>	3 ft	\$91.82/ft	\$275.46 <i>AK 18/11/06</i>
3		M6061T6R6.000		Round Bar 6.00" : MATERIAL: 6061- T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR AS PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117 4128/4115/4116 OR QQ- AA-200/8 OR AMS-QQ-A- 200/8 OR AMS 4160 OR ASTM B221 OR ASTM B221 receive ft	Firmed	-	11/9/18	12 ft	0 ft	12 ft	\$89.22/ft	\$1,070.64

**Line Item Note** 2 PCS OF 6 FT

Plex 10/26/18 11:33 AM dart.lavoie.chantal



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

# PURCHASE ORDER PO041480

Items												
Line Item	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
4		MT-1144-R4.500		AISI 1144 Stressproof Round Bar 4.500" : MATERIAL: AISI 1144 STRESSPROOF STEEL ROUND BAR  ASTM A311 or UNS G11440	Firmed	-	11/9/18	6 ft	0 ft	6 ft	\$122.00/ft	\$732.00
5 ✓ AT		MT-4140QT-R6.500		AISI 4140 Q&T Round Bar 6.500" Dia. MATERIAL : AISI 4140 QUENCHED & TEMPERED STEEL ROUND BAR ASTM 4140 QT or ASTM 4142 QT	Firmed	-	11/9/18	3 ft ✓ 3ft	0 ft	3 ft AT 18/11/06	\$119.25/ft	\$357.75
6		MT-4140QT-R2.500		AISI 4140 Quenched & Tempered Steel Round Bar 2.500" Dia. : AISI 4140 Q&T Round Bar : MAT'L: AISI 4130 QUENCHED & TEMPERED ROUND BAR AS PER ASTM 4140 QT OR ASTM 4142 QT	Firmed	-	11/9/18	12 ft	0 ft	12 ft	\$20.52/ft	\$246.24
7 ✓ AT		M17-4-H1150-R1.500		17-4 SS Round Bar 1.500" : MATERIAL: 17-4 PH CONDITION H1150  MATERIAL: 17-4 PH / S I7400 / TYPE 630 SS ROUND BAR GRAIN MUST BE ALONG LENGTH OF BAR MINIMUM YIELD STRENGTH PER TABLE MINIMUM ULTIMATE STRENGTH PER TABLE SPECIFICATION: AMS 5643 OR ASTM A564  H1150 MIN. YIELD TENSILE 105 KSI / MIN. ULTIMATE TENSILE 135 KSI receive ft	Firmed	-	11/9/18	12 ft ✓ 12.75ft	0 ft	12 ft AT 18/11/06	\$28.45/ft	\$341.40

Line Item Note MATERIAL: 17-4 PH / S I7400 / TYPE 630 SS ROUND BAR  
GRAIN MUST BE ALONG LENGTH OF BAR  
MINIMUM YIELD STRENGTH PER TABLE  
MINIMUM ULTIMATE STRENGTH PER TABLE

SPEC'S AMS 5643 OR ASTM A564

Grand Total: \$5,063.49



Castle Metals®

A. M. Castle & Co.


PACKING SLIP/  
CERTIFICATE OF CONFORMANCE

Page 1 of 1

Shipment No:3747716

<b>Ship From:</b> A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		<b>Sold To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		<b>Ship To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		<b>Deliver To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
<b>Date Shipped</b> 05-NOV-18	<b>F.O.B.</b> ORIGIN	<b>Freight Terms</b> Prepaid		<b>Carrier</b> MANITOULIN	<b>BOL No</b> 3747716-2		

<b>Shipment Details</b>	<b>Final Destination Branch - TOR</b>
-------------------------	---------------------------------------

<b>Order No</b> 5301505	<b>Line No</b> 1	<b>Item No</b> 14876.MO	<b>Description</b> 5.5000.RD.304/304L.STAINLESS.RT.ANN.132.0000-156.0000 CUT TO 10.625 IN ( + .1250/- .0000 IN) - BAND SAW CUTTING SPECIFICATIONS: ASTM A276			
<b>Purchase Order No</b> 41480		<b>Part Number</b>	<b>Ordered Qty</b> 10.00 PCS	<b>Invoice Qty</b> 10.00 PCS		
<b>Details</b> ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS						
<b>Delivery No.</b> 122318805	<b>Mill/Source</b>	<b>Heat Number</b> 	<b>Mech Id</b>	<b>PCS</b> 10	<b>Width (IN)</b>	<b>Length (IN)</b>
					<b>Shipped Qty(LBS)</b> 735.6403	

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative: **SUE KALOUS** Date: **NOV 05 2018** Name:





**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP/  
CERTIFICATE OF CONFORMANCE

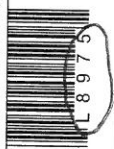
Page 1 of 2

Shipment No:3747716

<b>Ship From:</b> A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		<b>Sold To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		<b>Ship To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		<b>Deliver To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
<b>Date Shipped</b>	<b>F.O.B.</b>	<b>Freight Terms</b>		<b>Carrier</b>		<b>BOL No</b>	
05-NOV-18	ORIGIN	Prepaid		MANITOULIN		3747716-2	

**Shipment Details**

Final Destination Branch - TOR

Order No	Line No	Item No	Description				
5301505	5	41424.MO	6.5000.RD.4140.ALLOY.HR.Q & T.SR/SF.285/321 BHN.240.0000-288.0000 CUT TO 36 IN ( + .2500/- .0000 IN) - BAND SAW CUTTING SPECIFICATIONS: ASTM A29,ASTM A304,ASTM A322,ASTM A434,UNS G41400				
Purchase Order No		Part Number	Ordered Qty	Invoice Qty			
41480			1.00 PCS	3.0000 FT			
Details		ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS					
Delivery No.	Mill/Source	Heat Number	Mech Id	PCS	Width (IN)	Length (IN)	Shipped Qty(LBS)
122343154		 L8975	Q6368	1			347.2222

We hereby certify the material covered by this certification conforms in accordance with the above specifications **NOV 05 2018** meet the applicable requirements within 60 days of the shipment. Material cut to the correct size, or material cut by the customer, may be returned for credit.

**SUE KALOUS**

Date Printed: 05-NOV-2018 02:42:04 PM



**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP/  
CERTIFICATE OF CONFORMANCE

Page 2 of 2

Reviewed by Authorized Castle Metals Representative:

NOV 05 2018

Date:

Name: **SUE KALOUS**



## Castle Metals

HEAT NUMBER: 547581

MECHANICAL ID:

ITEM CODE: 14876

PO/LINE NUMBER: 452142

RECEIPT NUMBER:

SUPPLIER: MAGELLAN

SPECIFICATION:

LCS: NO

COMMENT:

APPROVED: LC



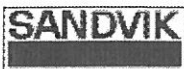
CERTIFICATE No. A/17-635496 Rev 01  
 Date 2017-02-06 Page 1/3  
 Rev.date 2017-03-20

INSPECTION CERTIFICATE acc to  
 EN 10204 3.1

SANDVIK MATERIALS TECHNOLOGY  
 P O BOX 1220  
 SCRANTON, PA 18501  
 USA

<b>Customer References</b> 211267 Customer order 2016-11-14 450-00991 MAGELLAN CORP		<b>Sandvik References</b> Order No. Subs No. ABSMT Dispatch note 66680 48822/53 ABSMT No. C.Code 284-23674 03																																					
<b>Material description</b> HOT WORKED STAINLESS BAR STEEL ROLLED ANNEALED PEEL TURNED AND POLISHED CONTINUOUS CAST Melt Source SMT SANDVIKEN SWEDEN Steel making process Origin ELECTRIC FURNACE+AOD Sweden		<b>Steel/material Designations</b> Sandvik SANMAC 304 SANMAC 304L AISI UNS 304/304L S30400/S30403 W.nr EN no 1.4301 1.4301/1.4307																																					
<b>Technical requirements</b> EN 10088-3:-2005, MIC 1702 SUPPLEMENT AISI 304, API 6A PSL3, AMS-QCS-763C, NACE MR0175/ISO 15156-3:2009, NACE MR0103:2012 ASTM A-276-16A, ASTM A-479-16A, ASME SA-479-ED-15 SEC II PART A Suitable for manufacturing of components in acc. with ASTM A-182-16A																																							
<b>EXTENT OF DELIVERY</b> <table border="1"> <thead> <tr> <th>It</th> <th>Product designation</th> <th>Heat</th> <th>Lot</th> <th>Pieces</th> <th>Kg</th> <th>Lbs</th> </tr> </thead> <tbody> <tr> <td>03</td> <td>MBR-SANMAC-304L-5-1/2"</td> <td>547581</td> <td>57272</td> <td>6</td> <td>2601.0</td> <td>5735.00</td> </tr> <tr> <td colspan="4">Total</td> <td>6</td> <td>2601.0</td> <td>5735.00</td> </tr> </tbody> </table>				It	Product designation	Heat	Lot	Pieces	Kg	Lbs	03	MBR-SANMAC-304L-5-1/2"	547581	57272	6	2601.0	5735.00	Total				6	2601.0	5735.00															
It	Product designation	Heat	Lot	Pieces	Kg	Lbs																																	
03	MBR-SANMAC-304L-5-1/2"	547581	57272	6	2601.0	5735.00																																	
Total				6	2601.0	5735.00																																	
<b>TEST RESULTS</b> Chemical composition (weight%) ASTM A-751-14A <table border="1"> <thead> <tr> <th>Heat</th> <th>C</th> <th>Si</th> <th>Mn</th> <th>P</th> <th>S</th> <th>Cr</th> <th>Ni</th> <th>Mo</th> </tr> </thead> <tbody> <tr> <td>547581</td> <td>0.011</td> <td>0.23</td> <td>1.73</td> <td>0.029</td> <td>0.028</td> <td>18.34</td> <td>8.22</td> <td>0.38</td> </tr> <tr> <th></th> <th>W</th> <th>Co</th> <th>V</th> <th>Ti</th> <th>Cu</th> <th>Al</th> <th>Nb</th> <th>N</th> </tr> <tr> <td>547581</td> <td>0.02</td> <td>0.038</td> <td>0.048</td> <td>&lt;0.003</td> <td>0.24</td> <td>0.003</td> <td>&lt;0.01</td> <td>0.073</td> </tr> </tbody> </table>				Heat	C	Si	Mn	P	S	Cr	Ni	Mo	547581	0.011	0.23	1.73	0.029	0.028	18.34	8.22	0.38		W	Co	V	Ti	Cu	Al	Nb	N	547581	0.02	0.038	0.048	<0.003	0.24	0.003	<0.01	0.073
Heat	C	Si	Mn	P	S	Cr	Ni	Mo																															
547581	0.011	0.23	1.73	0.029	0.028	18.34	8.22	0.38																															
	W	Co	V	Ti	Cu	Al	Nb	N																															
547581	0.02	0.038	0.048	<0.003	0.24	0.003	<0.01	0.073																															
<b>Tensile test at room temperature</b> Longitudinal <table border="1"> <thead> <tr> <th rowspan="2">Lot</th> <th colspan="2">Yield strength</th> <th>Tensile strength</th> <th colspan="2">Elongation</th> <th>Red.of Area</th> </tr> <tr> <th>Mpa</th> <th>MPa</th> <th>Mpa</th> <th>%</th> <th>%</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>57272</td> <td>Rp0.2</td> <td>Rp1.0</td> <td>Rm</td> <td>A</td> <td>2"</td> <td>Z</td> </tr> <tr> <td></td> <td>250</td> <td>301</td> <td>591</td> <td>57</td> <td>57</td> <td>77</td> </tr> </tbody> </table>				Lot	Yield strength		Tensile strength	Elongation		Red.of Area	Mpa	MPa	Mpa	%	%	%	57272	Rp0.2	Rp1.0	Rm	A	2"	Z		250	301	591	57	57	77									
Lot	Yield strength		Tensile strength		Elongation		Red.of Area																																
	Mpa	MPa	Mpa	%	%	%																																	
57272	Rp0.2	Rp1.0	Rm	A	2"	Z																																	
	250	301	591	57	57	77																																	
Quality assurance - Viktor Hellberg/QA-manager Primary Products MTC Service / Certificates																																							

AB SANDVIK MATERIALS TECHNOLOGY Reg No. 556234-6832 VAT No. SE663000-060901  
 SE-81181 SANDVIKEN SWEDEN www.smt.sandvik.com mtc\_service.smt@sandvik.com



## CERTIFICATE

No. A/17-635496 Rev 01

Date 2017-02-06 Page 2/3

Rev.date 2017-03-20

## Hardness test

## Mid-Radius

	Min	Max	Average
Lot	HB	HB	
57272	155	162	157

## Surface

	Min	Max
Lot	HV	HV
57272	201	207

## Grain size acc to ASTM E-112 ED-13

Lot	
57272	6.5 6.5

## Impact test, J, 20 °C

	Single values	Average
Lot	Joule	Joule
57272	427 423 346	399

## Impact test, J, 20°C, Transversal acc. to ISO 148-1

	Single values	Average
Lot	Joule	Joule
57272	82 88 82	84

## Following controls/tests have been satisfactorily performed:

- Intergranular corrosion test acc to ASTM A-262 PR.E
- Material Identification.
- Macrostructure
- ASTM-A 388 satisfactory ASME VIII Division 2
- Visual inspection and dimensional control.

## Heat Treatment:

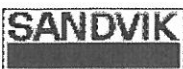
Heat treated according to ASTM A484 at the minimum temperature of 1040°C and cooled rapidly enough to avoid unacceptable grain boundary carbide precipitations.

## Cleanliness according to ASTM E-45 method A.

Lot	Type	Thin	Heavy
57272	A	1	0.3
	B	0	0.0
	C	2	0.4
	D	1	0.0

## Melt Source

Heat 547581 SMT SANDVIKEN SWEDEN



## CERTIFICATE

No. A/17-635496 Rev 01

Date 2017-02-06 Page 3/3

Rev.date 2017-03-20

ASTM A-314-13A, ASTM A-484-14A, ASTM A-751-14A,  
 ASTM A-370-13 (hardness test)  
 ASTM A-473-13 (Chemical composition and mechanical properties only)  
 ASME SA 193 section 2 Part A Grade B8M (Chemical composition only)  
 ASME SA320 (Studs and bolts) Class 1B8M (Chemical composition only)  
 ASTM A-193-14 (Fasteners) Grade B8 (Chemical composition only)  
 ASTM A-320-14 Class 1 B8 (Bolting materials): (Chemical composition only)  
 ASME SA-182 section 2 part A  
 AMS 5639  
 AMS 5647  
 API 6A-PSL3 (Ultrasonic testing)  
 RoHS Compliant

Final product meets the maximum levels of inclusions, thin 3.0 and heavy 2.5, as per ASTM E45 Method A.

Round Stainless Steel Bar material

The raw material is free from radioactive contamination.

Material free from mercury contamination.

Reduction ratio= 5.7:1

No welding or weld repair.

This Material complies with DFARS 252.225-7014 & Alternate 1

Country Of Origin: Sweden

This Material does not comply with FAR BAA (FAR 52.225-1)

This Material complies with DFARS BAA (DFARS 252.225-7001) and FAR TAA (FAR 52.225-5)

The material is conforming to directive 2005/53/EC, 2002/95/EC and CD 2005/618/EC.

This is to certify that the contents of this certified material test report are correct and accurate and that all test results and operations are in compliance with the material specification.

The delivered products comply with the specifications and requirements of the order.

The material is manufactured according to a Quality system, approved and registered to ISO 9001:2008.

No unauthorized alterations. The contents of this Inspection Certificate may not be modified or revised in any way without the prior written approval of AB Sandvik Materials Technology. Unauthorized alterations to the Inspection Certificate, including introduction of false, fictitious or fraudulent statements or entries, may be punishable by fines, imprisonment, or both. This Inspection Certificate may be copied only in the manner and for the purposes specified in Section 6 of EN 10204:2004. Contravention of this notice will be prosecuted to the fullest extent of applicable law.

The certificate is produced with EDP and valid without signature.

AB SANDVIK MATERIALS TECHNOLOGY Reg No. 556234-6832 VAT No. SE663000-060901  
 SE-81181 SANDVIKEN SWEDEN www.smt.sandvik.com mtc\_service.smt@sandvik.com

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS ROUND BAR  
(NOTE: AISI 303 NOT ACCEPTABLE)

SPECIFICATION:

ASTM A276

PART NUMBER:

M304R0.750

WHERE "D.DDD" = DIAMETER IN INCHES

EG. 0.75" ROUND BAR = M304R0.750

RELEASED  
R 08/25/14

B	REFORMAT (N/C, ALSO SPECS (ZIN D6-1))	CP	09.07.15
A	NEW ISSUE	AJS	08.03.03
REV.	DESCRIPTION	BY	DATE
DESIGN	1.5		
DRAWN	9		
CHECKED	4		
MFG. APPR.	M304R		
APPROVED	M304R		
DE APPR.	M304R		
DATE	09.07.15		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M304R			
REV. B			
SHEET 1 OF 1			
TITLE 304/316 ROUND BAR			
SCALE NTS			
COPYRIGHT © 2000 BY DART AEROSPACE LTD			

## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304RS.500  
 DATE: 18/11/06

PO / BATCH NO.: P0041480/S125168

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 8.854ft  
 QUANTITY INSPECTED: 8.854ft  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 5.500"  
 THICKNESS RECEIVED: 5.500"  
 SHEET SIZE ORDERED: —  
 SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/> N	
CORRECT FINISH	Y <input checked="" type="checkbox"/> N	
CORROSION	Y <input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	Y <input checked="" type="checkbox"/> N	
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="checkbox"/> N	ASTM A276
CORRECT THICKNESS	Y <input checked="" type="checkbox"/> N	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/> N	
CORRECT REF # TO LINK CERT	Y <input checked="" type="checkbox"/> N	HT: 847581
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="checkbox"/> N	
CORRECT M# ON THE MATERIAL	Y <input checked="" type="checkbox"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>At</u>	SIGNED OFF BY: _____
DATE: <u>18/11/06</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



**PACKING SLIP/  
CERTIFICATE OF CONFORMANCE**

A. M. Castle & Co.


Page 1 of 1

Shipment No: 3747716

<b>Ship From:</b> A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		<b>Sold To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	<b>Ship To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN	<b>Deliver To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA
<b>Date Shipped</b> 05-NOV-18	<b>F.O.B.</b> ORIGIN	<b>Freight Terms</b> Prepaid	<b>Carrier</b> MANITOULIN	<b>BOL No</b> 3747716-2

**Shipment Details**

<b>Order No</b> 5301505	<b>Line No</b> 2	<b>Item No</b> 30490	<b>Description</b> 5.5000.RD.6061.T6511.ALUMINUM.EXT 39"LONG SPECIFICATIONS: AMS-QQ-A-200/8
<b>Purchase Order No</b> 41480	<b>Part Number</b>	<b>Ordered Qty</b> 39.00 IN	<b>Invoice Qty</b> 3.3333 FT
<b>Details</b> ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX: HEAT #S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS			

<b>Delivery No.</b> 122317036	<b>Mill/Source</b>	<b>Heat Number</b> 	<b>Mech Id</b>	<b>PCS</b> 1	<b>Width (IN)</b>	<b>Length (IN)</b> 40.0000	<b>Shipped Qty(LBS)</b> 93.3333
----------------------------------	--------------------	---	----------------	-----------------	-------------------	-------------------------------	------------------------------------

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.	
Reviewed by Authorized Castle Metals Representative:	<div style="display: flex; justify-content: space-between;"> <div>NOV 05 2018</div> <div>Date:</div> </div> <div style="display: flex; justify-content: space-between;"> <div>NA: SUJE KALOUS</div> <div>Name:</div> </div>



## Castle Metals

HEAT NUMBER: Z00021388

MECHANICAL ID:

ITEM CODE: 30490

PO/LINE NUMBER: 463331

RECEIPT NUMBER:

SUPPLIER: KAISER

SPECIFICATION:

LCS: NO

COMMENT:

APPROVED: AMB

# KAISER ALUMINUM FABRICATED PRODUCTS

*Best in Class*

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
5205 KAISER DRIVE  
KALAMAZOO, MI 49048

CUSTOMER PO NUMBER: 463331-1		CUSTOMER PART NUMBER: 30490		PRODUCT DESCRIPTION: KAISERSELECT PRECISION ROD 5.500 +/-0.017		
KAISER ORDER NUMBER: 6049199	LINE ITEM: 001	SHIP DATE: 04/12/2018	KAISER LOT NUMBER: Z00021388	ALLOY: 6061	TEMPER: T6511B	
WEIGHT SHIPPED: 3018.000 LB	QUANTITY: 9.000 PCS	B/L NUMBER: 622458	DIAM/DAF/THKNS: 	WIDTH: 	LENGTH: 12.000 FT	
SHIP TO: A. M. CASTLE & CO. 3800 ENTERPRISE DRIVE JANESVILLE, WI 53546 USA			SOLD TO: A. M. CASTLE & CO. 1420 KENSINGTON ROAD OAK BROOK, IL 60523 USA			

### Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CONDUCT.	BEND
Z00021388	0001	0001	58.9	56.0	12.3	RE 94	N/A	N/A
Z00021388	0001	0002	57.2	54.4	12.0	RE 93	N/A	N/A
Z00021388	0002	0001	54.7	51.4	12.1	RE 92	N/A	N/A

### Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
108297	.78	.27	.28	.10	.96	.09	.03	.02	.00	.00	.00	.01	.03

### Applicable Requirements:

PER ASTM-B221-14, STENCILED ASME-SB221 2009 SECT II PER AMS-QQ-A-200/8A UNS# A96061  
MEETS ALL SPECIFICATION REQUIREMENTS FOR 6061-T6511/T6 ELEVATED MINIMUM MECHANICAL  
PROPERTIES AS FOLLOWS: UTS = 42.0 KSI MIN YIELD = 38.0 KSI MIN ELONGATION = 10.0% MIN

### Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA  
MERCURY IS NOT A NORMAL BACKGROUND ELEMENT IN ALUMINUM ALLOYS. NEITHER MERCURY NOR ANY  
OF ITS COMPOUNDS ARE UTILIZED BY KAISER ALUMINUM IN THE MANUFACTURE OF THIS MATERIAL.  
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA  
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5  
TRADE AGREEMENTS).

Plant Serial: 00330049

Kaiser Order Number: 6049199

Line Item: 001

**KAISER**  
**ALUMINUM**  
**FABRICATED PRODUCTS**

*Best in Class*

**CERTIFIED TEST REPORT**

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
5205 KAISER DRIVE  
KALAMAZOO, MI 49048

**CERTIFICATION**

Kaiser Aluminum Fabricated Products, LLC hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms and conditions of sale. Test reports are on file, subject to examination.

Aimee L. Macnowski, Quality & Technology Manager

*Aimee L. Macnowski*

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL 6061-T6 / T6510 / T6511 / T62 ALUMINUM ROUND BAR  
SPECIFICATION:  
QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)  
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)  
OR ASTM B211 OR ASTM B221

PART NUMBER: M6061T6R(D,DDD)  
DIA.  
WHERE "D,DDD" = DIAMETER IN INCHES  
EG. 5/8" ROUND BAR = M6061T6R0.625

RELEASED  
N 2009-09-09  
MD

B	REFORMAT DWG. ADD B211 & B221 SPEC (ZN D6-1).	CP	09.07.13
A	NEW ISSUE	CS	01.06.08
REV	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR			
DATE	09.07.13		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M6061T6R		REV. B	
TITLE 6061-T6 ROUND BAR		SHEET 1 OF 1	
DATE		SCALE	
09.07.13		NTS	
COPYRIGHT © 2001 BY DART AEROSPACE LTD			

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6x6176RS.500  
 DATE: 18/11/06

PO / BATCH NO.: 0041480/5125169

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 3.33ft  
 QUANTITY INSPECTED: 3.33ft  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 5.500"  
 THICKNESS RECEIVED: 5.500"  
 SHEET SIZE ORDERED: —  
 SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/> N	
CORROSION	Y <input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> N	ASTM B221
CORRECT THICKNESS	<input checked="" type="checkbox"/> N	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/>	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> N	Lot: 200021388
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

*testers located in the Quality Office*

<b>QC 18 INSPECTION</b>		<b>ENGINEERING SIGNOFF (if required)</b>	
INSPECTED BY: <u>AK</u>		SIGNED OFF BY: _____	
DATE: <u>18/11/06</u>		DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# CERTIFICATE OF MATERIAL TEST REPORTS

<b>H-A Industries</b> A Division of A. M. Castle & Co. 4527 Columbia Avenue Hammond, IN 46327										Customer:  A. M. Castle & Co. 1420 Kensington Road Suite 220 Oak Brook, IL 60523													
MANUFACTURER (MILL)					CUST. ORDER NO.																		
TIMKENSTEEL CORPORATION																							
IC	HEAT NO.	MECHANICAL ID	ORDER NO.		SHIP QUANTITY					DATE													
41424	L8975	Q6368	11675464		8000					15-MAR-18													
DESCRIPTION OF MATERIAL																							
6.5000.RD.4140 ALLOY HR.Q & T.SR/SF.285/321 BHN.240.0000-288.0000																							
CHEMICAL ANALYSIS %																							
C	MN	P	S	SI	CU	NI	CR	MO	AL														
.42	.96	.010	.030	.22	.25	.12	.99	.20	.036														
JOMINY HARDENABILITY Rc																							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	20	22	24	26	28	30	32
57	57	57	56	56	55	55	55	55	54		53		51		49	48	46		43		40		38
METALLURGICAL																							
MACROETCH						NAFTA		GRAIN SIZE															
S: 2						YES		5															
R: 2																							
C: 3																							
CONTINUOUS CAST		REDUCTION RATIO				FROM IC																	
YES		13				11304																	
COUNTRY OF MANUFACTURE		COUNTRY OF MELT																					
United States		US																					
HEAT TREATMENT																							
AUSTENITIZE MINUTES		AUSTENITIZE TEMP °F		TEMPER MINUTES		TEMPER TEMP °F		WATER QUENCH TEMP															
84		1675		86		1320		95															
HARDNESS										MECHANICAL													
Location	Type		Location	Type		Location	Tensile PSI	Yield .2% PSI	ELONG 2" %	R.A. %													
SURF	HBW	289	MID	HBW	269	MID	125843	97091	20	53.7													
SURF	HBW	291																					
MID	HBW	259																					
CONFORMANT TO SPECIFICATIONS																							
ASTM A29-16 ASTM A322-13 ASTM A304-16 ASTM A434-17 CLASS BC UNS# G41400																							

H-A INDUSTRIES CERTIFIES THAT APPROPRIATE INFORMATION IS TAKEN FROM TEST REPORTS FURNISHED TO US BY OUR SUPPLIER AND WHICH ARE ON FILE IN OUR OFFICE. H-A INDUSTRIES CERTIFIES THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND TESTED IN ACCORDANCE WITH METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS. THE RESULTS OF INSPECTION AND TESTING CONFORM TO THE SPECIFICATIONS LISTED INCLUDING ASTM A370 LATEST REVISION AND EN 10204:2004 3.1.

H-A CERTIFIES THAT THE METAL WHICH IS THE SUBJECT OF THIS CERTIFICATION IS MERCURY FREE AND WAS NOT EXPOSED TO ANY RADIOACTIVE SOURCE MATERIAL DOES NOT CONTAIN ANY POLYBROMINATED BIPHENYLS (PBB) OR POLYBROMINATED DIPHENYL ETHERS (PBDE). NO WELD OR WELD REPAIR WAS PERFORMED ON THIS MATERIAL.

THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER FEDERAL STATUTE.

NAME: JAN L. CARUSO

TITLE: MANAGER OF TECHNICAL SERVICES

SIGNATURE:

*Jan L. Caruso*

8 7 6 5 4 3 2 1

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW ISSUE	17-790	17.12.13	VM	ML

**SPECIFICATION CONTROL DRAWING**

PURCHASE MATERIAL : AISI 4140 ROUND BAR  
MINIMUM ROCKWELL C = 20 Rc  
MAXIMUM ROCKWELL C = 38 Rc

SPECIFICATION: ASTM A29, AMS 6349, AMS 6382, AMS 6529

PART NUMBER: MT-4140-R-1D-DDD]  
WHERE "D.DDD" = DIAMETER IN INCHES  
EX. 4" ROUND BAR = MT-4140-R-4.000

<b>DART</b> AEROSPACE	
TITLE AISI 4140 ROUND BAR	
PART NO. MT-4140-R	REV. A
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES DIMENSIONS APPLY AFTER FINISHING	
DESIGNED BY: VM 17/12/13	TOLERANCES: FRACTIONS ± .01 DECIMALS ± .01 ANGLES ± .1°
DRAWN BY: ML 12/10/2017	ROUNDS ± .01
CHECKED BY: DP 12/20/2017	ROUNDS ± .01
APPROVED BY: ML 22/20/2017	ROUNDS ± .01
SCALE: NTS	SHEET 1 OF 1
THIS DOCUMENT IS PROPERTY OF DART AEROSPACE AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION IN WRITING FROM DART AEROSPACE.	

9 8 7 6 5 4 3 2 1

## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-4140QT-R6.500

PO / BATCH NO.: P0041480/5125170

DATE: 10/11/06

MATERIAL CERT REC'D: Yes

THICKNESS ORDERED: 6.500"

QUANTITY RECEIVED: 3ft

THICKNESS RECEIVED: 6.500"

QUANTITY INSPECTED: 3ft

SHEET SIZE ORDERED: -

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: -

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<u>N</u>	
CORRECT FINISH	<u>Y</u>	N	
CORROSION	Y	<u>N</u>	
CORRECT GRAIN DIRECTION	<u>Y</u>	N	
CORRECT MATERIAL PER M-DRAWING	<u>Y</u>	N	<u>ASTM A29</u>
CORRECT THICKNESS	<u>Y</u>	N	
PHOTO REQUIRED	Y	<u>N</u>	
CORRECT REF # TO LINK CERT	<u>Y</u>	N	<u>MT: L8975</u>
CORRECT MATERIAL IDENTIFICATION	<u>Y</u>	N	
CORRECT M# ON THE MATERIAL	<u>Y</u>	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<u>N</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<u>N</u>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

*testers located in the Quality Office*

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AK</u> DATE: <u>10/11/06</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



Castle Metals®

PACKING SLIP/  
CERTIFICATE OF CONFORMANCE

A. M. Castle & Co.


Page 1 of 1

Shipment No:3747716

<b>Ship From:</b> A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		<b>Sold To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		<b>Ship To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		<b>Deliver To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
<b>Date Shipped</b> 05-NOV-18	<b>F.O.B.</b> ORIGIN	<b>Freight Terms</b> Prepaid	<b>Carrier</b> MANITOULIN	<b>BOL No</b> 3747716-2			

<b>Shipment Details</b>		<b>Final Destination Branch - TOR</b>	
-------------------------	--	---------------------------------------	--

<b>Order No</b> 5301505	<b>Line No</b> 7	<b>Item No</b> 39894	<b>Description</b> 1.5000.RD.17CR-4NI.STAINLESS.CF.H1150.132.0000-156.0000 SPECIFICATIONS: AMS 5643
<b>Purchase Order No</b> 41480	<b>Part Number</b>	<b>Ordered Qty</b> 12.00 FT	<b>Invoice Qty</b> 12.7500 FT
<b>Details</b> ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS			

<b>Delivery No.</b> 122318871	<b>Mill/Source</b> VALBRUNA CORPORATION	<b>Heat Number</b> 	<b>Mech Id</b> 1	<b>PCS</b> 1	<b>Width (IN)</b>	<b>Length (IN)</b> 153.0000	<b>Shipped Qty(LBS)</b> 74.5000
----------------------------------	---	---	---------------------	-----------------	-------------------	--------------------------------	------------------------------------

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.	
Reviewed by Authorized Castle Metals Representative:	Date: <b>NOV 05 2018</b>
Name: <b>SUE KALOUS</b>	



## Castle Metals

HEAT NUMBER: 266616

MECHANICAL ID:

ITEM CODE: 39894

PO/LINE NUMBER: 390024

RECEIPT NUMBER:

SUPPLIER: VALBRUNA

SPECIFICATION:

LCS: NO

COMMENT:

APPROVED: LC



## CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004), 3.1

Certificato nr. MEST944876 / 2016 /

Nach/According to/Gelien

Buchung/Est/Esse

Ciente / Besteller/Purchaser/Client  
VALBRUNA STAINLESS INC.  
2400 TAYLOR STREET WEST  
46801 - FORT WAYNE, IN 46801 - US

Stato di fornitura: Hot rolled Polished Aged Peeled  
Lieferzustand:  
Delivery state:  
Etat de livraison:

Produttore:  
Hersteller/Werk/Usine productrice:  
ACCIAIERIE VALBRUNA S.P.A.

Ordine nr. 50080 390024 CASTLE  
Bestell:  
Your order:  
Commande:

Tipo di Elaborazione: E+AOD  
Erweiterungsart:  
Melting process:  
Mode d'elaboration:

Marchi di Fabbrica:  
Zeichen des Lieferwerkes:  
Traces marqués:  
Siglas de fábrica productrice:

Conferma ordine nr. E16007345  
Werk/Order Order/Rateur:

Qualità: T-630 H1150 #39894  
Werkstoffmarke/Qualität:

Punzone del Collaudatore:  
Stempel des Werkstoffverständigen:  
Inspector's stamp/Uncon de l'inspecteur:

Avviso di Spedizione: D-VI16026310  
Lieferanzeige/Packing list/B.L.:

Marca: V1741  
Markenbezeichnung:  
Brand / Marque:

Punzonatura: 630  
Kennzeichnung:  
Marking:  
Marquage:

SPECIFICHE:	Notes
Anforderungen / Requirements / Exigences	Anmerkungen / Notes / Notes
3174-04 38 630 H1150 AGED AISI 630 AMS 2303 F. AMS 5643 Y S17400 H1150 ASME SA564 2015 S17400 H1150 (0) ASTM A564 2013 S17400 H1150	(0)SECTION II PTA 2015 EDITION

Tolleranza: ASTM A484-16 TABLE 7							
Tolerance/Allowance/Tolérance							
Pos. nr. Pos. nr. to be given	Oggetto Gegenstand Product description Description de produit	Dimensioni - in Abmessungen Dimension Dimension	Lunghezza - in Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - LB Gewicht Weight Poids	Lotto nr. Losn. Lot nr. Lot n°
0010	Round	1.5000	153/ 153	266616	68	5.164	619312310

TEST ALLO STATO DI FORNITURA										
Test on delivery condition / Prüfung auf lieferbarem produkt / Test a l'etat de fourniture / Prueba sobre el material así como entregado										
1) Leistungsanforderungen, Lieferversprechen, Q-Toleranz (abhängig)										
TEST	Provetta/ Probe Specimen/Epreuve Long. diam. Ø ext. Ø ext. Diam. Ø ext. Width diam. Thickness Long. diam. épaisseur	°F	Posiz. Sagge Position Lieu	Snerimento Seizgrupe Yield Stress Limite élastique Rp 0,2 % k s i	Snerimento Snergrupe Yield Stress Limite élastique k s i	Resistenza Festigkeits Tensile strength Resistance à traction Rm k s i	Allungamento Bruchdehnung Elongation Allongement E 4d %	Strizione Erweichung Reduction of area Section RA %	Resilienza Resilienz Impact Value Resilience	Durezza Härte Hardness Dureté HB
Valori richiesti Anforderungen/Required values Valeurs demandées	min max			105	-	135	-	16	50	277
A	12,5	68	L	117		143	23	62		311

Test On Delivering Condition			
Test on delivery condition / Prüfung auf lieferbarem produkt / Test a l'etat de fourniture / Prueba sobre el material así como entregado			
TEST		min	max
A	HRC	28,0	32,8

TEST ALLO STATO DI FORNITURA			
Test on delivery condition / Prüfung auf lieferbarem produkt / Test a l'etat de fourniture / Prueba sobre el material así como entregado			
TEST		min	max
A	Delta Ferrite		5,0
A	RATINGS FREQUENCY		1,10
A	RATINGS SEVERITY		1,05



# Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.l.  
 Telefono 0444.968211 - Fax 0444.968366  
 Stab. 39100 BOLZANO (Italia) - Via A. Volta, 4/37  
 Telefono 0471.924111 - Fax 0471.924497

## CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: **EN 10204 (2004), 3.1**  
 Nachfolgend zu: EN 10204 (2004), 3.1

Certificato nr. **MEST944876 / 2016 /**  
 Prüfungsprotokoll

Cliente / Besteller/Purchaser/Client  
**VALBRUNA STAINLESS INC.**  
**2400 TAYLOR STREET WEST**  
**46801 - FORT WAYNE, IN 46801 - US**

Stato di fornitura: **Hot rolled Polished Aged Peeled**  
 Lieferzustand: Hot rolled Polished Aged Peeled  
 Delivery state: Hot rolled Polished Aged Peeled  
 Etat de livraison: Hot rolled Polished Aged Peeled

Produttore:  
 Hersteller/Hersteller/Hersteller  
**ACCIAIERIE VALBRUNA S.P.A.**

Ordine nr.: **50090 390024 CASTLE**  
 Bestell-Nr.: 50090 390024 CASTLE  
 Your order: 50090 390024 CASTLE  
 Commande: 50090 390024 CASTLE

Tipo di Elaborazione: **E+AOD**  
 Erzeugungsverfahren: E+AOD  
 Making process: E+AOD  
 Mode d'élaboration: E+AOD

Marchi di Fabbrica:  
 Zeichen des Unternehmens  
 Trade marks  
 Signes de l'usine productrice

**AV**

Conferma ordine nr.: **EI16007345**  
 Works Order Confirmation: EI16007345

Qualità: **T-630 H1150 #39894**  
 Werkstoff/Grade/Qualität: T-630 H1150 #39894

Punzione del Collaudatore:  
 Stempel des Werksachverständigen  
 Inspector's stamp/Pointon de l'expertiseur

**MR**

Avviso di Spedizione: **D-VI16026310**  
 Lieferschein/Packing list: D-VI16026310

Marca: **V174/1**  
 Markenbezeichnung: V174/1  
 Brand / Marque: V174/1

Punzonatura: **630**  
 Kennzeichnung: 630  
 Marking: 630  
 Marquage: 630

Mechanical Properties										
TEST	Provenza / Provenance Erzeugnis / Erzeugnis Long. diam. / Diam. Wahl. Diam. / Diam. Long. diam. / Diam. Wahl. Diam. / Diam.	σ <sub>F</sub>	σ <sub>0.2</sub>	Resilienza Herschlagwert Impact Value Resilience KV Joule	Espansione laterale Lateral Expansion Lateral ex Expansion			Shear		
Valori richiesti Anforderungswerte Values demanded		min		30	30	30	-	-	-	-
		max		167	165	162	1.523	1.525	1.519	-
<b>B</b>	<b>10X10</b>	<b>68</b>	<b>L</b>	<b>167</b>	<b>165</b>	<b>162</b>	<b>1.523</b>	<b>1.525</b>	<b>1.519</b>	

Mechanical properties according to ASTM A378.  
 Delta Ferme according to AMS 2315

Analisi chimica													
Chemische Zusammensetzung / Chemical Analysis / Analyse chimique													
Colata / Cast Schmelze / Coulee	max.	0.070	1.00	1.00	15.00	0.50	3.00	3.00	0.040	0.030	-	-	-
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	P %	S %	Ta %	-	-	-
<b>266616</b>	<b>0.036</b>	<b>0.44</b>	<b>0.55</b>	<b>15.55</b>	<b>0.17</b>	<b>3.27</b>	<b>4.70</b>	<b>0.025</b>	<b>0.025</b>	<b>0.0008</b>			
Colata / Cast Schmelze / Coulee	max.	0.450	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
	Cb(Nb) %	Nb %	Ta %	-	-	-	-	-	-	-	-	-	-
<b>266616</b>	<b>0.295</b>	<b>0.295</b>	<b>0.295</b>										

Macro etch test : satisfactory.  
 Furnace calibrated according to AMS-H-6675.  
 Pyrometry in accordance with AMS2750.  
 Reduction ratio = 27,1 : 1  
 Material solution annealed 1904°F for 1 h.  
 air cooled to below 90°F.  
 Age-hardened 1150°F for 4 h. air cooled to below 90°F  
 Material is OFARS Compliant

Sono state soddisfatte tutte le condizioni richieste  
 Die gestellten Anforderungen sind erfüllt  
 The material has been furnished in accordance with the requirements  
 Le matériel a été livré conforme aux exigences

Controllo antimescolanza: OK  
 Verwechslungsprüfung: erfolgreich durchgeführt  
 Antimixing testing performed: OK  
 Contrôle antimeslange fait: s.o.

Controllo visivo e dimensionale: soddisfa le esigenze  
 Sichtprüfung und Ausmessung: ohne Beanstandung  
 Visual inspection and dimensional checks: satisfactory  
 Contrôle visuel et dimensionnel: satisfaisant

Vicenza, **24/10/16**

VCC008 - MEST944876

(Mod. MCE2)

Il collaudatore di stabilimento / der Werkssachverständige / Works inspector / L'agent d'usine

**M. Rizzotto**

Pagina - 2 di 3

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformit  a EN 10204 (2004) , 3.1

நாடுகளின் பட்டியல்

Certificato nr. MEST944876 / 2016 /

FutureTense.com

Cliente / Besteller/Purchaser/Client  
VALBRUNA STAINLESS INC.  
2400 TAYLOR STREET WEST  
46801 - FORT WAYNE, IN 46801 - US

**Stato di fornitura**  
Lieferzustand  
Delivery state  
État de livraison

Hot rolled Polished Aged Peeled

Producers

Herstellung/Umsatz/Produktion

**ACCIAIERIE VALBRUNA S.P.A.**

Ordine nr 50080 390024 CASTLE

Bestell  
Your order  
Commen

**Tipologia di Elaborazione** E+AOD

Erweichungsart  
Melting process  
Anne deformation

Marchi di Fabbrica

Zeichen des Liefeswerkes  
Trade marks  
Sigles de l'usine productrice

Punzone del Collaudatore

Stempel des Werkstättverständigen  
Inspector & stamp/Pointon de l'essayeur

Conferma ordine nr. E16007345

Work/Out Order# 0101

Qualität:  
Wertstoff/Grade/Juorno

T-630 H1150 #39894

ME

Avviso di Spedizione: D-VI16026310

Lieferantenpaßkarte Nr. 1

Marca:

V17411

Markenbezeichnung  
Brand / Nuance

Punzonatura: 630

ကနဦးစိတ်ပတ်ဝန်းကျင်  
မီခိုက်  
မီခိုက်

Milled and manufactured in Italy      No welding or weld repair      Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination through Portal System when it leaves the production plant.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2008, ISO/TS16949 : 2009, AS 9100C

The Quality Management System is Certified acc. Pressure Equipment Directive [97/23/EC] Annex 1, s. 4.3 and 2014/68/EU by TÜEV and LLOYD'S  
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation  
of applicable civil and criminal laws. Acclavier Valbrunn shall protect its rights and interests before any competent court, authority and jurisdiction.

Maximal and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.

The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded: at least, upon order of the Product by the Purchaser, Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

Vicenza, 24/10/16

VCQ008 - MEST944876

(Mod. MCE2) [www.mce2.com](http://www.mce2.com)

Il collaudatore di stabilimento / der Werksachverständige / Works Inspector / L'agent d'usine

M. Rizzotto, *Kent*

Pagina - 3 di 3



# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M17-4-H1150-R1.500  
 DATE: 18/11/06

PO / BATCH NO.: P0041480/S125171

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 12.75 ft  
 QUANTITY INSPECTED: 12.75 ft  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 1.500"  
 THICKNESS RECEIVED: 1.500"  
 SHEET SIZE ORDERED: -  
 SHEET SIZE RECEIVED: -

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <u>(N)</u>	
CORRECT FINISH	<u>(Y)</u> N	
CORROSION	Y <u>(N)</u>	
CORRECT GRAIN DIRECTION	<u>(Y)</u> N	
CORRECT MATERIAL PER M-DRAWING	<u>(Y)</u> N	AMS 5643
CORRECT THICKNESS	<u>(Y)</u> N	
PHOTO REQUIRED	Y <u>(N)</u>	
CORRECT REF # TO LINK CERT	<u>(Y)</u> N	M: 266616
CORRECT MATERIAL IDENTIFICATION	<u>(Y)</u> N	
CORRECT M# ON THE MATERIAL	<u>(Y)</u> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <u>(N)</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <u>(N)</u>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

*testers located in the Quality Office*

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>At</u> DATE: <u>18/11/06</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in